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FERO CORPORATION
TEST REPORT

SCOPE OF WORK
AD HOC ASTM E119 TEST – COMPONENT-LEVEL, MECHANISM-FOCUSED FIRE EXPOSURE EVALUATION OF THE FERO BREAK-AWAY™ FIRE-RELEASE CONNECTORS

REPORT NUMBER
G106214889SAT-002 R2

TEST DATES
10/15/25 - 10/27/25

ISSUE DATE 10/30/25

REVISED DATE 12/30/25

PAGES
14

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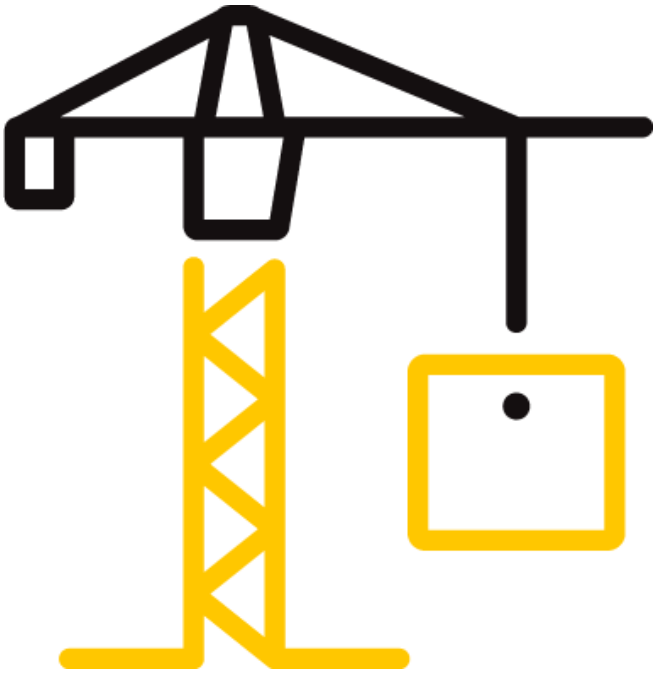

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TEST REPORT FOR FERO CORPORATION
Report No.: 12BG106214889SAT-002 R2
Date: 10/30/25

REPORT ISSUED TO

FERO CORPORATION
15305 – 117 Avenue NW
Edmonton, AB T5M 3X4
Canada

SECTION 1

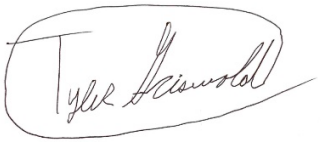
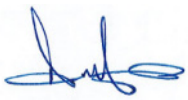
SCOPE

Intertek Testing Services NA, Inc. dba Intertek Building & Construction (B&C) was contracted by FERO Corporation, 15305 – 117 Avenue NW, Edmonton, AB T5M 3X4, Canada, to perform Ad Hoc testing in accordance with ASTM E119-25, *Standard Test Methods for Fire Tests of Building Construction and Materials*, and Intertek Test Plan 106214889SAT-001, on their FERO Break-Away™ Fire Release Connectors. Results obtained are tested values and were secured by using the designated test method(s). Testing was conducted at Intertek B&C test facility in Elmendorf, Texas, USA.

Unless differently required, Intertek reports apply the "Simple Acceptance" rule also called “Shared Risk approach,” of ILAC-G8:09/2019, Guidelines on Decision Rules and Statements of Conformity.

Intertek B&C will service this report for the entire test record retention period. The test record retention period ends four years after the test date. Test records, such as detailed drawings, datasheets, representative samples of test specimens (where required by Certification or Accreditation bodies), or other pertinent project documentation, will be retained for the entire test record retention period.

For INTERTEK B&C:

COMPLETED BY:	Tyler Griswold	**REVIEWED BY:**	Abel de Hoyos
TITLE:	Project Engineer – Fire Resistance	**TITLE:**	Manager – Project Engineering – Fire Resistance
SIGNATURE:		**SIGNATURE:**	
DATE:	10/28/25	**DATE:**	10/30/25

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SECTION 2
TEST SPECIMEN DESCRIPTION

The specimens consisted of two proprietary steel wall connectors manufactured by FERO Corporation: the Break-Away™ Fire Release Connector – Dual Load Bearing and the Break-Away™ Fire Release Connector – Dual Inverted Load Bearing. This ad hoc ASTM E119 evaluation was conducted as a component-level, mechanism-focused fire exposure assessment to evaluate the thermal release behavior of the FERO Break-Away™ Fire Release Connectors. The testing was intended to characterize the performance and timing of the release mechanism when subjected to the ASTM E119 standard time–temperature exposure. The FERO Break-Away™ Fire-Release Connectors are specialized structural components designed to provide lateral restraint to framing members under normal service conditions while ensuring the integrity of firewalls during fire events.

Under normal conditions, the connectors provide 5 kN of lateral resistance per slot, achieved through the interaction between the grooves and the fusible washer. The support angle functions as a structural member, ensuring that the load-bearing capacity of the connectors is not limited by the fusible washer. During a fire, the fusible washer melts and softens, allowing movement to relieve lateral stresses caused by deformation of framing members. The slots in the plate enable complete disengagement of the framing members from the firewall under extreme deformation.

Each connector was fabricated from a 6 in. × 6 in. × ½ in. mild-steel plate bent to 90°, with two ¾-in. wall-mount holes on one face and two grooved slots on the opposite face for through-bolting. The Dual Load Bearing connector had its wall plate above the slotted face, while the Dual Inverted Load Bearing had it below. In both, the slotted face was oriented downward, with fusible washers positioned against the grooves to ensure direct fire exposure.

Connectors were fastened to a reinforced concrete wall slab using ¾-in. anchors torqued to 140 N·m (103 ft-lb) per FERO's specification. A 16-gauge U-channel (6 in. wide × 1-1/8 in. deep × 24 in. long) was attached horizontally to each connector using the provided hardware. The assemblies were self-supported within the furnace test frame.

SECTION 3
SUMMARY OF TEST RESULTS

Two InterTek furnace tests were conducted to evaluate the fire-release performance of the FERO Break-Away™ Fire-Release Connectors under the ASTM E119 Time-Temperature Curve. The InterTek tests confirmed that the FERO Break-Away™ Fire-Release Connectors perform as expected:

- **Ambient Conditions:** The FERO Break-Away™ Fire-Release Connectors provided lateral restraint under normal conditions, maintaining structural stability.

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- **Fire Conditions:** During the ASTM E119 fire tests, the lateral restraint dropped to effectively zero within six minutes of exposure, simulating the maximum conditions a firewall is rated for.
  Specifically:
  - In **Test 1 (October 15, 2025),** both the Dual Load Bearing and Dual Inverted Load Bearing FERO Break-Away™ Fire-Release Connectors disengaged simultaneously after 10 minutes of exposure at a furnace temperature of approximately 1307°F.
  - In **Test 2 (October 27, 2025),** the Dual Load Bearing FERO Break-Away™ Fire-Release Connectors released after 5 minutes 39 seconds at 1049°F, and the Dual Inverted Load Bearing connector released after 5 minutes 59 seconds at 1060°F.

SECTION 4
TEST METHOD(S)

The specimens were evaluated in accordance with the following:

ASTM E119-25, *Standard Test Methods for Fire Tests of Building Construction and Materials*

Intertek Test Plan 106214889SAT-001, dated August 15, 2025

SECTION 5
TEST PROCEDURE

Testing was conducted at Intertek Building & Construction in Elmendorf, Texas, to evaluate the fire-release performance of the FERO Break-Away™ Fire Release Connectors when exposed to a standard **ASTM E119** Time-Temperature Curve. The test was performed in a gas-fired furnace with an internal exposure area measuring 6.5 feet in width, 6 feet in length, and 4 feet in height. The furnace was equipped with three burners positioned along the side and back walls to ensure uniform heat distribution while preventing direct flame impingement on the specimens. Temperature control was achieved by adjusting the burner blower speed based on readings from four thermocouple probes located within the exposure chamber. Furnace temperature data were collected at six-second intervals using a Yokogawa Darwin 100-channel data acquisition system, and the recorded data were imported into Microsoft Excel.

Each connector assembly was mounted to a 6-inch-thick vertically reinforced concrete wall slab using ¾-inch concrete anchors torqued to 140 N·m (103 ft-lb). A 16-gauge steel U-channel measuring approximately 6 inches wide, 1-1/8 inches deep, and 24 inches long was attached horizontally to the slotted face of each connector using the supplied bolts, nuts, steel washers, and fusible washers. The assemblies were self-supported within the furnace test frame without auxiliary bracing. A stainless steel wire was connected to the end of each cantilevered U-channel and extended through a small gap beneath a steel lid that covered the furnace opening. The lid

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was elevated to the height of the concrete slab and supported by concrete blocks, with a 1-inch-thick ceramic fiber blanket placed beneath the front edge to allow free movement of the wire. At the exterior of the furnace, each wire was connected to a 26-lb steel plate used as a suspended weight.

Before testing, the wires were adjusted so that the weights rested on 2-foot-high concrete blocks, creating light tension but imposing no lateral force on the U-channels. When the weights were lifted off the blocks, they hung freely, applying a 26-lb lateral load to the corresponding connector assemblies. The specimens were exposed to the **ASTM E119** time-temperature curve for the duration of each test. After ten minutes of exposure, the weights were released to apply the lateral force. If disengagement did not occur, the load was reapplied at five-minute intervals until release or test termination. The elapsed time to complete disengagement was recorded for each connector.

The first test was conducted on October 15, 2025, beginning at 11:28 a.m. under ambient conditions of 82.0°F and 51.3% relative humidity. At the ten-minute mark, both connectors disengaged immediately upon application of the load. Due to the inconclusive nature of the results, a second test was performed on October 27, 2025, with the weights suspended for the entire duration of the exposure. This test began at 10:18 a.m. under ambient conditions of 77.0°F and 85.1% relative humidity. Upon completion of both tests, the furnace was shut down, and the specimens were cooled and examined for post-test condition, including evidence of fusible washer melting, hardware deformation, and connector release performance.

SECTION 6
TEST RESULTS

TEST 1:
On, October 15, 2025, testing was conducted in a laboratory environment with a temperature of 82.0 °F and a relative humidity of 51.3%. Below are the results of the test:

CONNECTOR TYPE	TIME OF RELEASE (min:sec)	TEMPERATURE AT RELEASE
Dual Load Bearing	10:00	1307°F
Dual Inverted Load Bearing	10:00	1307°F

TEST 2:
On, October 27, 2025, testing was conducted in a laboratory environment with a temperature of 77.0 °F and a relative humidity of 85.1%. Below are the results of the test:

CONNECTOR TYPE	TIME OF RELEASE (min:sec)	TEMPERATURE AT RELEASE
Dual Load Bearing	05:39	1049°F
Dual Inverted Load Bearing	05:59	1060°F

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SECTION 7
PHOTOGRAPHS

Photo No. 1
Concrete Anchors

Photo No. 2
Connector Mounted to Concrete Slab

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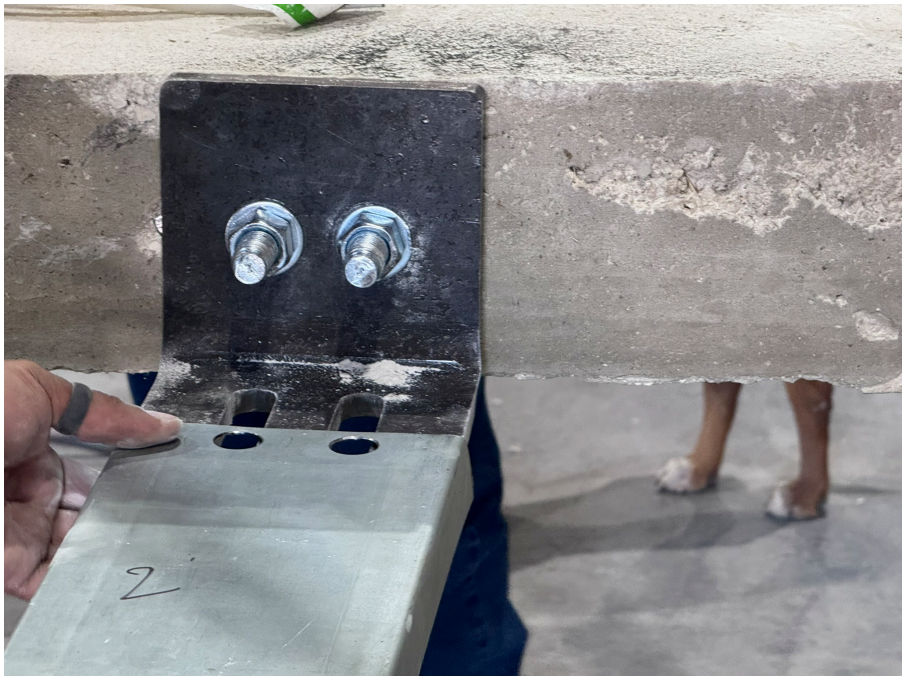

Photo No. 3
U- Channel Connected to Connector

Photo No. 4
Sual Inverted Load Bearing Assembly

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Photo No. 5
Dual Load Bearing Assembly

Photo No. 6
Assembly Positioned into Furnace Prior to Test 1

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Photo No. 7
Steel Wire Connected to U-Channel

Photo No. 8
Test 1 Setup

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Photo No. 9
Weights Removed from Nuetral Position during Test 1

Photo No. 10
Connector Disengagement during Test 1

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Photo No. 11
Connectors Post-Test

Photo No. 12
Connector Assemblies Placed into Furnace Prior to Test 2

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Photo No. 13
Dual Inverted Load Bearing Assembly

Photo No. 14
Dual Load Bearing Assembly

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Photo No. 15
Start of Test 2

Photo No. 16
Dual Load Bearing Connector Disengagement During Test 2

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SECTION 8

REVISION LOG

REVISION #	DATE	SECTION	REVISION
0	10/30/25	N/A	Original Report Issue
1	11/18/25	2, 3, 7	Information added about product, Summary of results reformatted, and Typo in Picture caption corrected.
2	12/30/25	Title, 2	Revised the title and expanded the test specimen section to include additional details describing the test procedure.